Applicants traverse each of these rejections as follows:

35 U.S.C. §102(b) Rejection Overcome

The Examiner rejected Claims 1-2, 4-6, 8, 10-13 and 15-20 under 35 U.S.C. §102(b) as being anticipated by Friend et al. because Friend et al. allegedly teaches a method for drug target screening that discloses a method comprising "providing plurality of cells comprising plurality of cells (wild-type cells (reference cells), modified cells), contacting each of the cells with a drug (test compound) and measuring expression of specific gene(s) in each of these cells by comparing the expression of genes with that of a reference cell and modification or alteration in gene expression indicates the mode of action (function) of said test compound" (Office Action, p. 2). Applicants respectfully traverse this rejection.

Applicants' invention is generally a method for rapidly and economically identifying the function of a test agent, such as a polypeptide, by examining changes in expression of genes in a plurality of cells contacted with the test agent. One embodiment of the invention is set forth in claim 1:

> 1. A method of identifying the function of a test compound, the method comprising providing a plurality of cells, the plurality comprising at least a first cell and a second cell, wherein the second cell is a different cell type from the first cell type;
> contacting each of the cells in the plurality with a test compound;
> measuring expression of one or more genes in said first cell; and
> measuring expression of one or more genes in said second cell;
> wherein an alteration in the expression of said genes relative to the expression of said one or more genes in a reference cell indicates the function of said test compound.

Thus, Applicants' invention generally comprises making observations of two or more cell types that have been contacted with a test compound and comparing them to a reference cell. No cell modification is necessary and only one set of observations is made: the expression of one or more genes in a test compound-contacted cell compared to expression of one or more genes in a reference cell (p. 2, lines 13-16). By observing gene expression in various cell types contacted with the test compound and comparing each type of cell with a non-contacted cell of the same type, it can be determined which gene or genes are affected by the test compound.

Contrary to the Examiner's assertion, Friend et al. does not teach or suggest the claimed invention. Friend et al. teaches methods that involve observing and comparing changes in the biological state of a cell, or "perturbations", and these methods comprise making three sets of observations: (1) the wild-type drug perturbation pattern, (2) the modified-cell perturbation

pattern, and (3) the modified-cell drug perturbation pattern (col. 12, lines 45-67). Friend et al. take these observations and compare them against each other in order to determine whether a particular gene is the target of a drug. Claim 41 of Friend et al. further requires determining the correlation between the first and second sets of observations and the correlation between the first and third sets of observations. The modified gene is identified as a drug target only if the first correlation indicates that the first and second sets of observations are statistically similar and the second correlation indicates that the first and third sets of observations are not statistically similar. Most importantly, the method described by Friend et al. uses only one cell type and cannot be practiced without using a set of genetically modified cells.

For the reasons stated above, Friend et al. is clearly not anticipatory of the present invention. Applicants do not agree with the additional reasons the Examiner gave for the alleged anticipation of the dependent claims, and in light of the foregoing, those additional reasons for rejection are rendered moot.

35 U.S.C. §103(a) Rejections Overcome

The Examiner rejects claims 3, 7 and 9 as unpatentable over Friend et al. and Kinzler et al. As described above, Friend et al does not teach or suggest the present invention. Friend et al. does not teach measuring gene expression in more than one type of cell, nor does it teach measuring gene expression in more than one type of cell where the cells have not been modified. There is nothing in Friend et al. that would suggest using any less than all three sets of observations and comparing them against each other in order to determine the drug target.

Kinzler et al. discloses methods of detecting gene expression, but does not disclose a method for identifying a drug target by using gene expression. Kinzler et al. does not teach or suggest a method of identifying a drug target by comparing gene expression in cells contacted with a test compound against gene expression in non-contacted cells, nor does it teach making such comparisons in more than one type of cell. Thus, Kinzler et al. does not rectify the deficiencies of Friend et al. Reading Friend et al. in view of Kinzler et al. does not make the present invention obvious to one skilled in the art.

The Examiner rejects claims 18 and 20 as unpatentable over Friend et al. and Bieche et al. Friend et al. does not teach or suggest the present invention for the reasons set forth above. Bieche et al. discloses a reverse transcription-PCR assay specifically for assessing alterations in the ERBB2 gene for use in breast cancer patients, but does not disclose a method for identifying

a drug target by using gene expression. Bieche et al. does not teach or suggest a method of identifying a drug target by comparing gene expression in cells contacted with a test compound against gene expression in non-contacted cells, nor does it teach making such comparisons in more than one type of cell. Thus, Bieche et al. does not rectify the deficiencies of Friend et al. Reading Friend et al. in view of Bieche et al. does not make the present invention obvious to one skilled in the art.

Moreover, in order to establish obviousness, there must be some teaching, suggestion or incentive in the prior art to produce the claimed invention. See In re Napier, 55 F.3d 610, 613, 34 U.S.P.Q.2d 1782, 1784 (Fed. Cir. 1994). "The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." In re Laskowski, 871 F.2d 115, 117, 10 U.S.P.Q.2d 1397, 1399 (Fed. Cir. 1989).

Furthermore, the motivation for modifying the prior art must come from the prior art, not from Applicants' specification. See In re Dow Chem. Co., 837 F.2d 469, 473, 5 U.S.P.Q.2d 1529, 1531-32 (Fed. Cir. 1988). The prior art cited by the Examiner does not provide motivation to modify the methods described by Friend et al. to arrive at the present claimed invention.

CONCLUSION

On the basis of the foregoing, Applicants respectfully submit that Examiner's rejections have been traversed and the pending claims are in condition for allowance. If there are any questions regarding these amendments and remarks, the Examiner is encouraged to contact the undersigned at the telephone number provided below.

Respectfully submitted,

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